

Book review

EROSION AND SEDIMENT TRANSPORT MEASUREMENT IN RIVERS: TECHNOLOGICAL AND METHODOLOGICAL ADVANCES

J. Bogen, T. Fergus and D. E. Walling (eds). IAHS Publication 283, IAHS Press, 2003, ISBN 1 901502 42 2, £45.50, 238 pp.

This is one of the International Association of Hydrological Sciences 'Red Book' series and contains a selection of papers that were presented at a Workshop held in Oslo in 2002. The Red Book series provides a useful function of making available relatively quickly papers that have been presented at conferences. They thus normally provide a comprehensive review of a particular subject area.

For this volume the papers have been grouped into three main themes: (1) suspended sediment (six papers), (2) erosion and sediment sources in catchments (five papers) and (3) bed load monitoring and associated processes (13 papers).

The section on suspended sediment starts with a paper that discusses the structure of sediment flocs in relation to the measurement and prediction of suspended sediment transport. The rest of the papers seem to ignore the implications, instead describing studies testing the use of optical and laser-based sensors to monitor suspended sediment concentrations and grain size distributions.

The section on erosion and sediment sources contains a wide selection of topics. There are papers on the use of radio-nuclides as tracers in studies of catchment sediment budgets; on identifying possible sources and transfer pathways for the output of suspended sediment from a catchment; on advances in the automatic monitoring of bank retreat; on a model for

estimating suspended sediment yields; and on monitoring suspended sediment and bed load dynamics.

The section on bed load monitoring starts with a review of the methods for bed load measurement. There then follow papers on bed load traps and basket samplers, continuous monitoring of bed load using load cells, tracing and tracking of bed load particles and monitoring bed load movement using different acoustic and magnetic devices.

The location of rivers on which sediment measurements are described range from Iceland to New Zealand, taking in Africa and Japan on the way, but the bulk of the papers relate to European or North American experience. A significant number of the papers describe work carried out in the UK or are written by authors from the UK. It is rather sad to reflect, therefore, that there is no meaningful monitoring of sediment movement in UK rivers.

The origin of the volume in a workshop on erosion and sediment transport measurement means that inevitably most of the papers concentrate on the mechanics of sediment transport measurement. There is less on the implications of these measurements for our knowledge of sediment mechanics. Perhaps this needs to be the topic for a future workshop.

This volume should be read by anyone who is intending to measure sediment transport, design a sediment monitoring system or who has to analyse or interpret sediment transport measurements. The volume contains a keyword index, which should aid readers in finding information on specific topics.

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